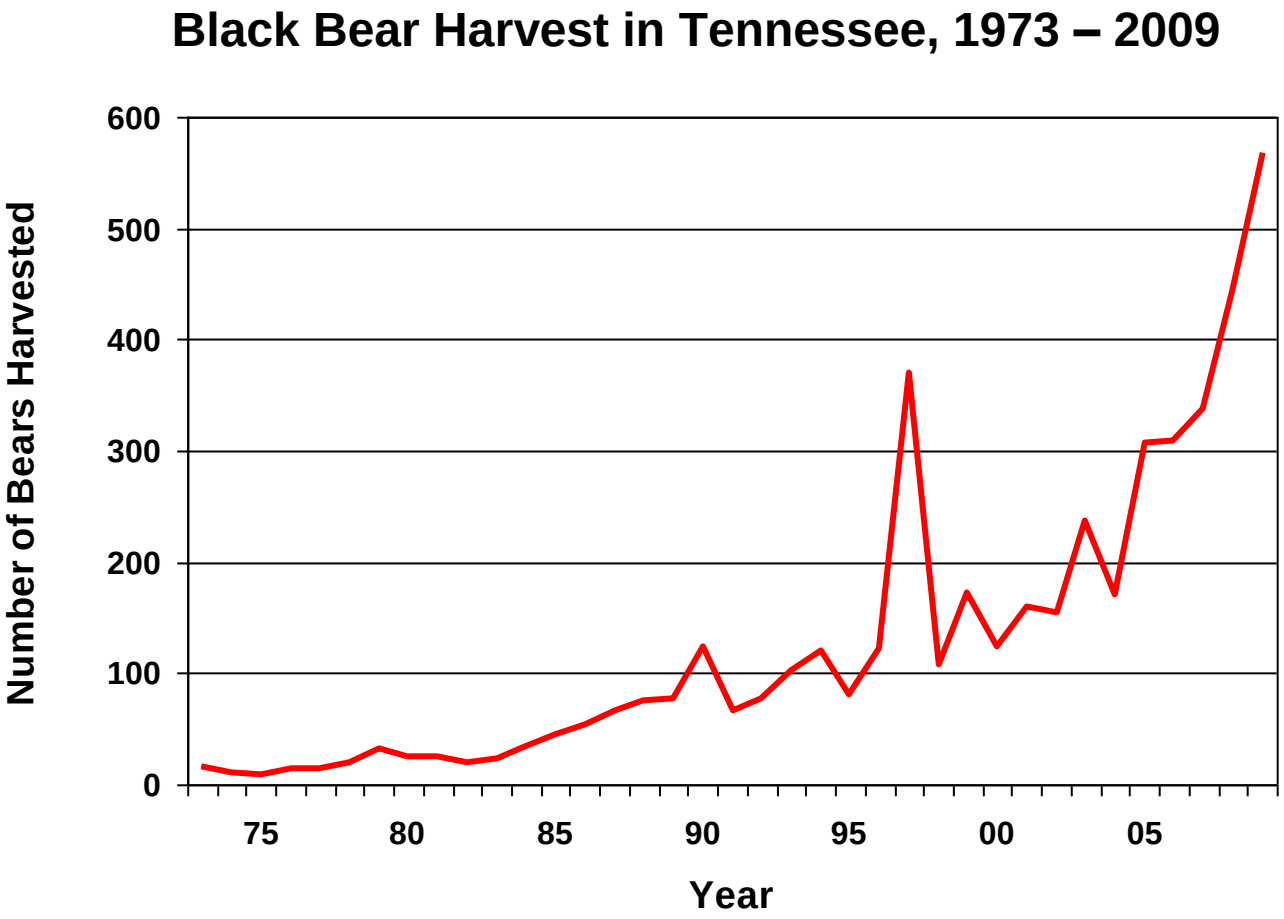
New Era in Black Bear Management in Tennessee

By David M. Brandenburg, Wildlife Biologist, Tennessee Wildlife Resources Agency

Black bear harvests in Tennessee have increased on average by 21% annually since 1977. Prior to 1980, the annual harvest in the state was usually less than 20 bears. Today the picture could not be more astounding. Since 2004, Tennessee's annual bear harvest has exceeded 300 animals! In 2009, a harvest of 571 bears in Tennessee set a new state record. These harvests are indicative of a growing bear population that is possibly higher today than it has been in the last 150 years.



The growth of Tennessee's bear population has certainly surpassed TWRA expectations and owes much of its success to the long-term vision and foresight of state and federal managers, scientists, and administrators. A key step was to establish national forests and parks that would shelter and protect the sparse bear population, and continue to provide quality bear habitat as the population grew and spread. Bear sanctuaries were established and laws against illegal harvests and the hunting of adult females were strictly enforced. In addition to these important management steps, bear populations benefited from the maturation and increased productivity of key oak forest species in protected areas. Black bears are intrinsically a tough, resilient, and adaptable species. With careful management and ecological conditions in their favor, their populations have responded dramatically.

The establishment of the Cherokee National Forest (CNF) and the Great Smoky Mountain National Park (GSMNP) in the 1930's is undeniably the most significant event in the history of bears in Tennessee. These events halted large-scale logging operations and subsequent habitat destruction through farming and human development. Today, these forests provide quality habitat for bears in Tennessee. Important oak species are now maturing and reaching peak acorn production, the most vital food source for bears of the southern Appalachians.

In 1973, four sanctuaries were established in Tennessee with the purpose of establishing source populations of bears, in particular breeding females that would remain protected from hunting. In 1997, two new bear sanctuaries in the northeastern portion of Tennessee were added to the sanctuary system. Including the GSMNP, where hunting is prohibited, there is nearly half a million acres of bear sanctuary in Tennessee.

Years of radiotelemetry research have established that pregnant females den significantly earlier than males. A crucial management decision was made in 1981 to protect female bears from excessive hunting mortality by moving the hunting season to December, after reproductive females had moved into dens. This simple change in hunting schedule reduced the percentage of females in the harvest from nearly 60% before 1981 to about 35-40% today.

Photo by Dr. Frank van Manen

Pregnant females den earlier than other bears. By moving hunting seasons to December, females are better protected from harvest.

Illegal hunting of bears in the southern Appalachians can impact bear populations substantially if it remains unchecked. TWRA law enforcement continues to play a key role in protecting Tennessee's bear resource. Bear poaching is common in the southern Appalachians. To address the illegal hunting of bears in Tennessee, a law enforcement operation was conducted and completed in 1988.

Photo by Willard Perryman

TWRA wildlife officers from Region IV in Area 42 cited 24 individuals in Blount County for illegally hunting bears in 2005.

This operation nicknamed “Operation Smoky” gained national attention. Forty three individuals in Tennessee, Georgia, and North Carolina were arrested and charged with 130 state and federal violations involving poaching and the selling of bear parts.

The resiliency and adaptability of black bears has probably contributed much to the population we have in the southern Appalachians today. Bear population growth has been unexpected considering their low reproductive potential; bears produce their first litter at the age of four with litters only averaging around two cubs. Furthermore, bears have faced some key natural and human-induced challenges. For example, before big game management and regulations, hunting and trapping of bears was largely unregulated and excessive. Additionally, large-scale logging operations fragmented the habitat and resulted in populations existing in only a few isolated areas in Tennessee. These two events were the most likely contributors to the decline of bear numbers to a low of only a few hundred individuals in Tennessee. Furthermore, bears survived the loss of the American chestnut, the most important food source for bears at that time. More recently, annual oak mast shortages resulted in significant increases in hunter harvest, roadkills, and total reproductive failure (e.g., 1997). Despite these negative events, bears have prevailed, and Tennessee’s current bear population is testimony to a tough and adaptable species.

Tennessee’s bear population thrives today largely due to the dedication of the TWRA, CNF, GSMNP, the bear research program at University of Tennessee and the support of Tennessee sportsman license dollars. Furthermore, given that bears have home ranges that often overlap state boundaries; the management of bears in the adjoining states of North Carolina, Georgia, and Virginia has certainly impacted the number of bears in Tennessee too. Wildlife managers, biologist, officers, and research scientist have been committed to managing and/or researching Tennessee’s bear population; many have devoted their entire careers to this endeavor. Few states have the history and years of combined expertise in bear research and management that is found here in Tennessee.

Today Tennessee’s wildlife, forest, and park service agencies confront new challenges in bear management. As human and bear populations increase, and more people move near public lands, bear-human interactions will undoubtedly increase creating potentially dangerous situations for the public and for bears.

Photo by Dr. Frank Van Manen

Dr. Mike Pelton has devoted his entire career to studying bears. His 39-year black bear study in the Great Smoky Mountain National Park is the longest continuous study of any large mammal in the word.

Nationwide bear management experience has clearly shown that bears attracted to human food sources, or that are deliberately fed by humans, have a relatively short life. The survival rate of bears receiving food from people is likely a fraction of that of "wild" bears that do not have repeated contact with humans. The direct and indirect feeding of bears is socially irresponsible and causes animals to become conditioned and habituated to people.

Photo by David M. Brandenburg

This Gatlinburg black bear received "handouts" from humans and eventually lost its "wild" nature and became habituated and a problem to humans. As a result, this bear was captured and relocated by TWRA. Disappointingly, this bear was roadkilled while trying to return home.

Bears that habituate to human presence eventually become a threat to human safety. The end result is that such bears either must be destroyed or removed from their home ranges to new areas where they are vulnerable to all the negative consequences - natural or man-made - of being relocated to unfamiliar territory. Our experience demonstrates that relocated bears are often killed by residents that are intolerant of bears, or are more vulnerable to being poached, or being killed on the highway as they try to return home. The fact that "garbage kills bears" is irrefutable.

The primary corrective action to this management dilemma is to restrict the access bears have to human foods. State and federal agencies have confronted significant challenges in bringing about even moderate changes to human behavior to achieve greater safety for humans and bears. In 2009, at least 30 deaths to bears in Tennessee were attributed to conflicts with humans. Often all that is required is to stop feeding bears, properly store garbage, remove bird feeders, and/or keep pet food indoors. Tennessee residents that share habitat with bears play a key role in the responsible stewardship of the land they share with wild animals. Adopting these simple measures and encouraging similar behaviors among neighbors can do much to keep our Tennessee bears "wild" and therefore safe. Keeping residents and visitors aware and informed will be essential for the coexistence of bears and humans in Tennessee.

Photo by Carol Weiner

Black bears are strongly attracted to bird feeders. Bears raiding bird feeders eventually become problems by becoming habituated to people. Bears that become threats to communities are very often killed by landowners fearful and/or intolerant of bears.

Today with Tennessee's bear population growing and expanding, we have reached the "Cultural Carrying Capacity" of bears. Simply stated, there are more bears than people may be willing to tolerate. The TWRA has addressed this dilemma, in part, by relaxing the protection of females through increased opportunities for hunting bears. For example, we currently have dog hunting opportunities for bears in November for all East Tennessee counties. Additionally, to specifically target bear-human conflicts occurring on private lands, the TWRA added an archery-only season for bears in 2007.

Photo by David M. Brandenburg

Bear-human conflicts will continue to rise in Tennessee as people continue to move into bear range. The wise stewardship of habitat will be essential for a viable and peaceful coexistence with black bears of Tennessee.

This new hunting opportunity resulted in 14, 79, and 147 bears harvested during the 2007, 2008, and 2009 archery-only seasons, respectively. Noteworthy, only six bears were harvested on public lands during the archery-only seasons.

Black bears are flagship species that inhabit county, city, state and federal jurisdictions in Tennessee. Our Tennessee Wildlife Resources Commission is tasked for making decisions for the betterment of the resource with information provided by resource managers of TWRA, GSMNP, CNF, and state scientists. The complexities of bear management issues (e.g., bear attacks, bear-human conflicts, feeding bears, illegal hunting and baiting, dog training and hunting seasons, and conflicts with the non-hunting public) makes it vital for a strong alliance among these groups so that bear management is based on sound and scientifically informed decisions. Tennessee residents and visitors can support bears by taking steps to ensure that wild bears remain "wild", by carefully managing sources of human food or garbage that might attract bears. The wise stewardship of habitat we share with bears is the joint responsibility of both wildlife managers and the public and will be essential for a viable future for our state treasure, the black bears of Tennessee.